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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/299,309	04/26/1999	GLEN R. WALTERS	BC9-98-105	3115

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EXAMINER

FERRIS, DERRICK W

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/299,309

Applicant(s)

WALTERS ET AL.

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. **Claims 1, 4, 6, 9, 10, 15 and 20** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to **claims 1, 9, 15 and 20**, in light of the specification, examiner fails to understand a “simulation of a low-bandwidth connection” [claim 1, line 1; claim 9, lines 1-2], a “speed control layer” [claim 15, line 4], and a “speed control means” [claim 20, line 5]. In particular, examiner notes the embodiment of a speed control layer as disclosed [page 7, lines 12-21] implying that almost anything that has hardware and/or software that adjusts the speed of a connection (by inserting delays in the data path [page 6, lines 3-4]) could be a speed controller. As this creates a vast number of possibilities, it is unclear on what the examiner is to search for with respect to these terms.

As to **claim 4 and 10**, the step of “setting” [claim 4, line 1; claim 10, line 2] the second predetermined speed is unclear with respect to the base claim. (Since the speed for the second connection is “predetermined”, the speed should already be “set” such that the step of “setting” is inherent in the base claim; that is it has to be set.)

As to **claims 6, 7 and 8**, it is unclear what applicant means by “the second data” [claim 6, line 3; claim 7, line 2; claim 8, line 2].

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art by applicant in view of "IP Technology Product Testing: How to evaluate IP based robustness and performance over changing network conditions" by SHUNRA Software, Ltd.

Examiner had to make several assumptions in order to overcome the 112 rejections as stated herein this Office action for the purposes of making the following rejection.

Applicant discloses the possibility of a computer having a network connection through a modem such that a computer can receive data from a first device (e.g., a dial-access server), which is in-turn connected to another device (e.g., a router). An example of such is shown in the figure 1.

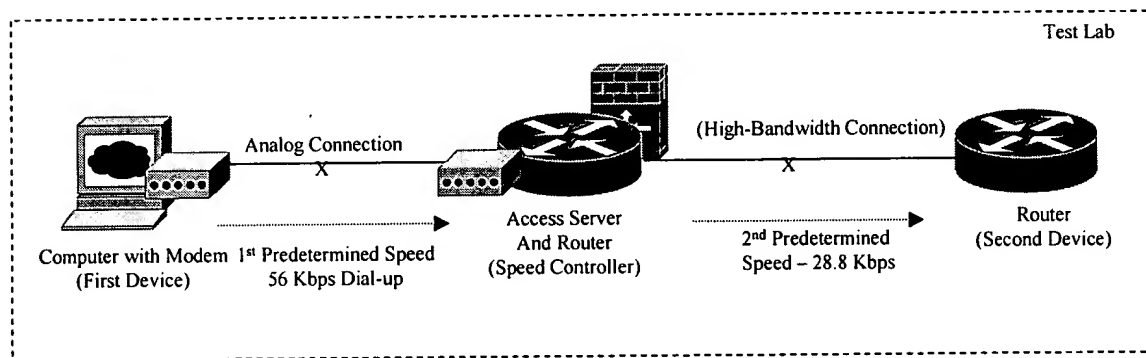


Figure 1: Applicant's Disclosure demonstrated in a test lab

Shown in figure 1 is a first device consisting of a computer with modem. This transfers data from the first device at a first predetermined speed such as 56 Kbps. On the other end of the connection could be an access server/router (i.e., speed controller) capable of receiving the data via an analog connection at one end and transferring the data over to a

second device (e.g., another router) over a high bandwidth connection such as an ATM connection with a PVC set to 28.8 kbps. Examiner also notes that the first predetermined speed type is not specified by the applicant. Hence a first predetermined speed could be that of a high-bandwidth connection slower than a second high-bandwidth connection. Examiner also notes that using ATM in a LAN (as one example) is possible (e.g., classical IP, MPOA, or LANE). As noted the speed of the first predetermined connection could be the speed of a modem connection since it is a modem. The second predetermined (or third predetermined speed) can be set when configuring the VC or trunk for the connection using ATM as one example of a high-bandwidth connection. Although not shown in figure 1, it is possible to connect more than one device up to the access server/router using more than one predetermined speed that is less than the first predetermined speed. With respect to claim 9, it is noted that the code on the access/router is considered a machine-readable medium such as Cisco's IOS for a Cisco access server/router. With respect to claim 20, it is also noted that proxy functions can also be incorporated on the access server/router, which is also well known in the art prior to applicant's invention (such as Cisco's firewall feature set).

As mentioned above, the applicant provides the motivation for using a computer connected to a network through a modem. Hence examiner notes applicant's admission of the prior art scenario as described above. Examiner furthermore notes that unlike in the applicant's specification [page 2, lines 17-24], this scenario can be implemented in a lab environment as is very well known in the art prior to applicant's invention using crossover cables and is furthermore impervious to third party interception or costly leased

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lines (thus providing an even stronger motivation). Examiner also notes that the above “speed controller” is in the bounds of the applicant’s definition of a “speed controller” using applicant’s specification since the speed controller is comprised of both hardware and software as disclosed on page 7, lines 12-21. Although the second (or third) predetermined bandwidth connection as described above is implicitly taught by applicant’s specification, examiner notes that a skilled artisan is capable of providing a second or third connection with a predetermined speed of that lower than a first determined speed using general networking equipment: one such example is provided above in hardware. Another example, provided by SHUNRA Software, Ltd, is limiting a bandwidth connection using a WAN emulation tool (i.e., software running on a computer as also described by applicant that can emulate any combination of bandwidth [page 19]) in conjunction with hardware. Furthermore, SHUNDRA Software, Ltd. discloses with respect to bandwidth the following:

“The lowest theoretical bandwidth on the route between the two endpoints. For example, a data transfer between two PC’s with 100 Mbps interfaces [high bandwidth connection] going through a 1.5 WAN link will be limited by the 1.5 Mbps link. The bottleneck can also be the bandwidth connecting one of the two endpoints to the WAN. When a modem user connects to the Internet from home the modem bandwidth will probably be the lowest bandwidth on the route [low bandwidth connection]” [bottom of page 10]

This concept can also be illustrated in Figure 3 [page 7]. Hence SHUNDRA Software, Ltd. implicitly teaches that a bandwidth can be limited by the lowest speed link such as a

modem (hence the motivation for emulating a low-speed connection). Furthermore, SHUNDRA Software, Ltd. discloses that this technology can benefit developers of IP technology [page 5] where IP technology is defined as client-server products such as an Intranet or Extranet application [page 8].

Therefore, there exists a strong motivation to use this reference as it solves applicant's disclosed problem of simulating a low speed network connection for the purposes of software development (e.g., web development). In addition, there exists a strong motivation for combining this reference with applicant's admission to the prior art in order to exemplify that it would have been obvious to a skilled artisan prior to applicant's invention for developing a system or method for limiting bandwidth through a "speed controller" for the purposes of transferring data to a second (or third) device over a high-bandwidth connection at a predetermined speed lower than a first predetermined speed and lower than the high-bandwidth connection for the purposes of simulating a modem (i.e., low speed) connection.

4. **Claims 1-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over "Application and Protocol Testing through Network Emulation" by Mark Carson in view of "NIST Net (network emulator) beta available" by Mark Carson.

Examiner had to make several assumptions in order to overcome the 112 rejections as stated herein this Office action for the purposes of making the following rejection.

It is well known in the art prior to applicant's invention that tools exist for the purpose of simulating parts of a network in order to reduce costs associated with a "real

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network” environment. One such example of a tool is NIST’s Network Emulation Tool (Net) which is a Linux-based network emulator. Mark Carson notes the advantages of simulating parts of a network in a lab-based environment in “Application and Protocol Testing through Network Emulation” [slides 3-6 of 20]. Carson also notes that NIST Net is capable of limiting bandwidth [slide 15 of 20]. Carson furthermore provides a motivation for why bandwidth should be limited in “NIST Net (network emulator) beta available” by disclosing that *“by operating at the IP level, NIST Net can emulate the critical end-to-end performance characteristics imposed by various wide area network situation (e.g., congestion loss) or by various underlying subnetwork technologies (e.g., asymmetric bandwidth situations of xDSL and cable modems)”*. Thus a motivation exists for limiting the bandwidth connection to a low bandwidth speed in order to emulate a subnetwork low-speed connection. Hence one possible scenario can be shown in figure 2.

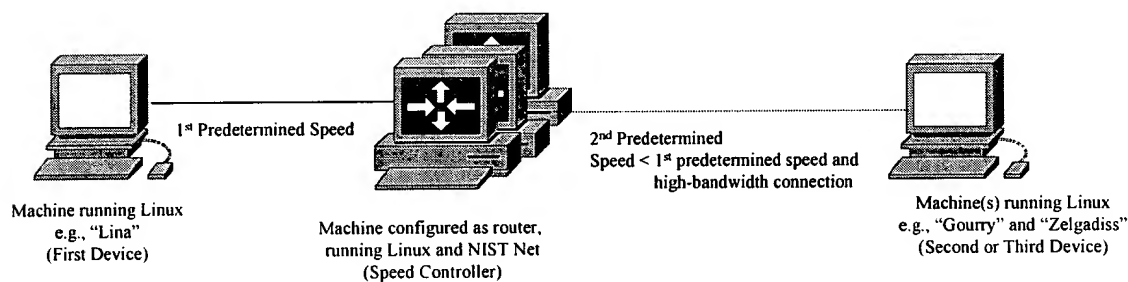


Figure 2: Example Scenario using NIST Net

Examiner notes that this is a scaled down version of a network using NIST Net found on slide 17 of 20. In this example a first device (e.g., “Lina”) is configured to send data to the device running NIST Net (i.e., a speed controller). The device running NIST net is also configured as a router such that packets (i.e., data) are sent to either a second or a

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third device (e.g., "Gourry" or "Xelloss"). As NIST Net is capable of limiting the bandwidth, the examiner notes that it would have been obvious (using the motivation described previously) to limit (i.e., set) the bandwidth of the second (or third) predetermined connection such that this bandwidth connection is of lower speed the first predetermined connection and slower than the overall bandwidth of the high-bandwidth connection. Examiner notes that it is also well known in the art prior to applicant's invention that a Linux box can also be configured as a proxy server device thus providing limited proxy server capability with respect to claim 20

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.


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DWF 
June 28, 2002

Derrick W. Ferris
Examiner
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MELVIN MARCELO
PRIMARY EXAMINER